

Pushing the Envelope			
2004 Mathematics			
State Curriculum			
Maryland Mathematics			
Grade 5			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	MD	MA.5.3.A.1.a	Measurement units: Students read customary and metric measurement units and estimate and determine weight or mass
Chemistry (pgs. 25-41)	MD	MA.5.3.C.1.d	Applications in measurement: Students estimate and apply measurement formulas and estimate and determine volume by counting
Physics and Math (pgs. 43-63)	MD	MA.5.1.A.1.a	Patterns and functions: Students identify, describe, extend, and create numeric patterns and functions and interpret and write a rule for a one-operation (+, -, x, ÷ with no remainders) function table
Pushing the Envelope			
2004 Mathematics			
State Curriculum			
Maryland Mathematics			
Grade 6			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	MD	MA.6.1.B.2.e	Identify, write, solve, and apply equations and inequalities: Apply given formulas to a problem solving situation
Chemistry (pgs. 25-41)	MD	MA.6.1.B.2.e	Identify, write, solve, and apply equations and inequalities: Apply given formulas to a problem solving situation
Physics and Math (pgs. 43-63)	MD	MA.6.1.A.1.b	Patterns and functions: Students identify, describe, extend, and create numeric patterns and functions and interpret and interpret and write a rule for a one-operation (+, -, x, ÷) function table
Physics and Math (pgs. 43-63)	MD	MA.6.1.B.1.a	Write and evaluate expressions: Write an algebraic expression to represent unknown quantities
Physics and Math (pgs. 43-63)	MD	MA.6.1.B.2.e	Identify, write, solve, and apply equations and inequalities: Apply given formulas to a problem solving situation
Physics and Math (pgs. 43-63)	MD	MA.6.6.A.1.c	Patterns and functions: Students identify, describe, extend, and create numeric patterns and functions and interpret and identify and determine equivalent forms of fractions as decimals, as percents, and as ratios
Physics and Math (pgs. 43-63)	MD	MA.6.6.C.3.a	Analyze ratios, proportions or percents: Represent ratios in a variety of forms
Physics and Math (pgs. 43-63)	MD	MA.6.6.C.3.b	Analyze ratios, proportions or percents: Use ratios and unit rates to solve problems
Rocket Activity (pgs. 69-75)	MD	MA.6.1.B.2.e	Identify, write, solve, and apply equations and inequalities: Apply given formulas to a problem solving situation

Pushing the Envelope			
2004 Mathematics			
State Curriculum			
Maryland Mathematics			
Grade 7			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	MD	MA.7.1.B.2.e	Identify, write, solve, and apply equations and inequalities: Apply given formulas to a problem solving situation
Chemistry (pgs. 25-41)	MD	MA.7.1.B.2.e	Identify, write, solve, and apply equations and inequalities: Apply given formulas to a problem solving situation
Physics and Math (pgs. 43-63)	MD	MA.7.1.B.1.a	Write and evaluate expressions: Write an algebraic expression to represent unknown quantities
Physics and Math (pgs. 43-63)	MD	MA.7.1.B.2.e	Identify, write, solve, and apply equations and inequalities: Apply given formulas to a problem solving situation
Physics and Math (pgs. 43-63)	MD	MA.7.6.A.1.c	Determine equivalent forms of rational numbers expressed as fractions, decimal, percents, and ratios
Physics and Math (pgs. 43-63)	MD	MA.7.6.C.3.a	Analyze ratios, proportions or percents: Determine equivalent ratios
Physics and Math (pgs. 43-63)	MD	MA.7.6.C.3.b	Analyze ratios, proportions or percents: Determine and use rates, unit rates, and percents as ratios in the context of a problem
Rocket Activity (pgs. 69-75)	MD	MA.7.1.B.2.e	Identify, write, solve, and apply equations and inequalities: Apply given formulas to a problem solving situation
Pushing the Envelope			
2004 Mathematics			
State Curriculum			
Maryland Mathematics			
Grade 8			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	MD	MA.8.1.B.2.f	Identify, write, solve, and apply equations and inequalities: Apply given formulas to a problem solving situation
Chemistry (pgs. 25-41)	MD	MA.8.1.B.2.f	Identify, write, solve, and apply equations and inequalities: Apply given formulas to a problem solving situation
Physics and Math (pgs. 43-63)	MD	MA.8.1.B.2.f	Identify, write, solve, and apply equations and inequalities: Apply given formulas to a problem solving situation
Rocket Activity (pgs. 69-75)	MD	MA.8.1.B.2.f	Identify, write, solve, and apply equations and inequalities: Apply given formulas to a problem solving situation
Pushing the Envelope			
2004 Mathematics			
State Curriculum			

Maryland Mathematics			
Grades 9-12 (Algebra/Data Analysis)			
Activity/Lesson	State	Standards	
Physics and Math (pgs. 43-63)	MD	MA.9-12.1.1.2	The student will demonstrate the ability to investigate, interpret, and communicate solutions to mathematical and real-world problems using patterns, functions and algebra. The student will represent patterns and/or functional relationships in a table, as a graph, and/or by mathematical expression.
Physics and Math (pgs. 43-63)	MD	MA.9-12.1.2.5	The student will demonstrate the ability to investigate, interpret, and communicate solutions to mathematical and real-world problems using patterns, functions and algebra. The student will apply formulas and/or use matrices (arrays of numbers) to solve real-world problems.
Rocket Activity (pgs. 69-75)	MD	MA.9-12.1.2.5	The student will demonstrate the ability to investigate, interpret, and communicate solutions to mathematical and real-world problems using patterns, functions and algebra. The student will apply formulas and/or use matrices (arrays of numbers) to solve real-world problems.